

Serial No. 10/594,867

PF040049

Remarks

In view of the following discussion, the applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C § 102, or obvious under the provisions of 35 U. S. C § 103. Thus, the applicants believe that all of these claims are in allowable form.

OBJECTIONS**A. Claims**

Claim 16-17 are objected to for informalities. In particular, for claim 16, the Examiner indicates that the term "illumination means" should be changed to "an illumination means"; the term "either" at line 18 should be deleted; and the term "asymmetric" spelled correctly. Applicants have amended claim 16 to replace the phrase "illumination means" with "an illumination means"; the term "either" at line 18 has been deleted; and the term "asymmetric" has been replaced with the term "axisymmetric".

Regarding claim 17, the Examiner indicates that the term "it" should be replaced with the term "the projection system". Applicants have amended claim 17 to replace the term "it" with the term "the projection system".

In view of these amendments to claims 16-17, the basis for the Examiner's objection thereto has been removed. Therefore, it is respectfully requested that the Examiners' objection to claims 16-17 be withdrawn.

Serial No. 10/594,867

PF040049

REJECTIONS**A. 35 U. S. C. § 102****1. Claims 16-20 are not anticipated by Takaura et al.**

Claims 16-17 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Takaura et al. (U. S. Patent 7,048,388 issued May 23, 2006). The applicants submit that claims 16-20 are not anticipated by this reference.

With regard to claim 16, Takaura et al. discloses a projection system, comprising:

- an illumination means that generates an illumination beam;
- an imager that creates an imaging beam from the illumination beam, the imaging beam being representative of an image;
- a projection module intended to project the image on a screen (screen 2, FIG. 6) defining a specified projection plane, said module comprising:
 - an objective for refracting the imaging beam, having a refractive portion comprising lenses (transmission optical system 3, which is refractive: see col.16, lines 18-19); and
 - a curved mirror (8) for deflecting the imaging beam,
 - at least two deflection surfaces (curved surfaces 4 to 7) for deflecting the imaging beam emanating from the objective, these surfaces being placed in the path of the imaging beam between the objective and the curved mirror,
- wherein the curved mirror (8) is an aspheric mirror having an axisymmetric shape defining an optical axis (see added axis on a copy of figure 6 below) that is parallel (but do not coincide) with the optical axis of the objective (see added axis on a copy of figure 6 below).

Serial No. 10/594,867

PF040049

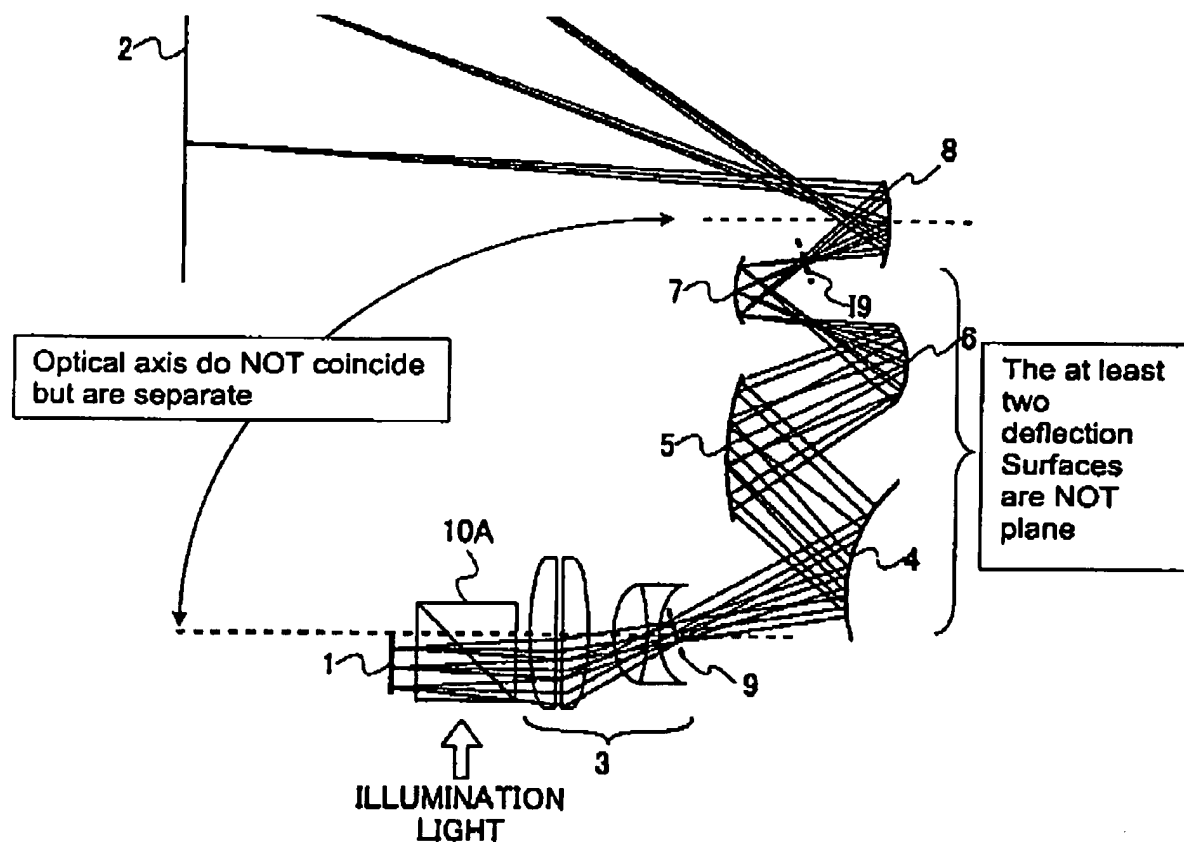


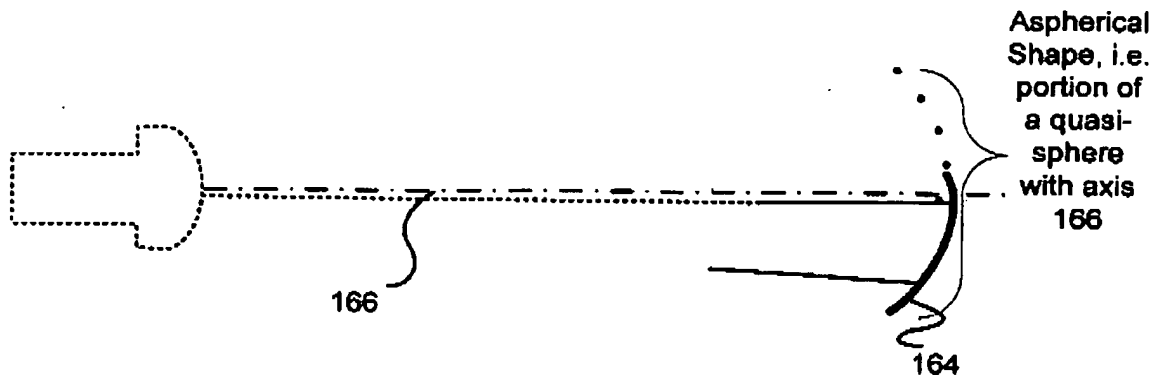
Fig.6 of Takaura

Takaura et al. does not disclose (see copy of figure 16 below):

- the curved mirror for deflecting the imaging beam is located below the optical axis of the objective,
- the at least two deflection surfaces are plane;
- the optical axis of the curved mirror (8) (which is an axis of the quasi-sphere of this mirror) coincides with the optical axis of the objective.

Serial No. 10/594,867

PF040049



Excerpt of Fig.16 of patent application, where a dotted part of the aspherical mirror 164 is added, to illustrate the symmetry with the axis which is common to the objective and to the mirror 164. (See also page 22, lines 23-24: "the concave mirror 164 is preferably located below the optical axis 166).

Therefore, claim 16 is not anticipated by Takaura et al. and is allowable under 35 U.S.C. 102(e). Claims 17-20 depend directly, or indirectly, from claim 16. For the same reasons as stated above for claim 16, claims 17-20 are also patentable over Takaura et al.

B. 35 U. S. C. § 103

1. Claims 18 -20 are not unpatentable over Takaura et al. in view of Burstyn

Claims 18-20 stand rejected under 35 U. S. C. § 103(a) as being unpatentable over Takaura et al. (U. S. Patent 7,048,388 issued May 23, 2006) in view of Burstyn (U. S. Patent 6,406,150 issued June 18, 2002). The applicants submit that claims 18-20 are not rendered obvious by the combination of these references.

Claims 18-20 depend from claim 16. With regard to claim 16, Takaura et al. discloses a projection system, comprising:

Serial No. 10/594,867

PF040049

an illumination means that generates an illumination beam;
an imager that creates an imaging beam from the illumination beam, the imaging beam being representative of an image;
a projection module intended to project the image on a screen (screen 2, FIG. 6) defining a specified projection plane, said module comprising:
an objective for refracting the imaging beam, having a refractive portion comprising lenses (transmission optical system 3, which is refractive: see col.16, lines 18-19); and
a curved mirror (8) for deflecting the imaging beam,
at least two deflection surfaces (curved surfaces 4 to 7) for deflecting the imaging beam emanating from the objective, these surfaces being placed in the path of the imaging beam between the objective and the curved mirror.

wherein the curved mirror (8) is an aspheric mirror having an axisymmetric shape defining an optical axis (see added axis on a copy of figure 6 above) that is parallel (but do not coincide) with the optical axis of the objective

Takaura et al. does not disclose (see copy of figure 16 above):

- the curved mirror for deflecting the imaging beam is located below the optical axis of the objective,
- the at least two deflection surfaces are plane;
- the optical axis of the curved mirror (8) (which is an axis of the quasi-sphere of this mirror) coincides with the optical axis of the objective.

Therefore, claims 18-20 are patentable over Takaura et al.

Burstyn discloses in Fig. 1, that the projected image is rectangular and further discloses arranging projector 24 such that the angle between the axis of said projector 24 and the long side of the image projected on said screen does not exceed 10 to 25 degrees.

Burstyn does not disclose:

- the curved mirror for deflecting the imaging beam is located below the optical axis of the objective,

Serial No. 10/594,867

PF040049

- the at least two deflection surfaces are plane;
- the optical axis of the curved mirror (8) (which is an axis of the quasi-sphere of this mirror) coincides with the optical axis of the objective.

Therefore, claims 18-20 are patentable over Burstyn.


Consequently, the combination of Takaura et al. with Burstyn does not describe or suggest the invention recited in claim 18-20. Thus, claims 18-20 are patentable over Takaura et al. in view of Burstyn.

CONCLUSION

Thus, the applicants submit that none of the claims, presently in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C § 102. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring continuation of the adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,


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